

A. H. DAVIES.  
SELF HEATED SAD IRON.  
APPLICATION FILED DEC. 14, 1908.

931,686.

Patented Aug. 17, 1909.

2 SHEETS—SHEET 1.

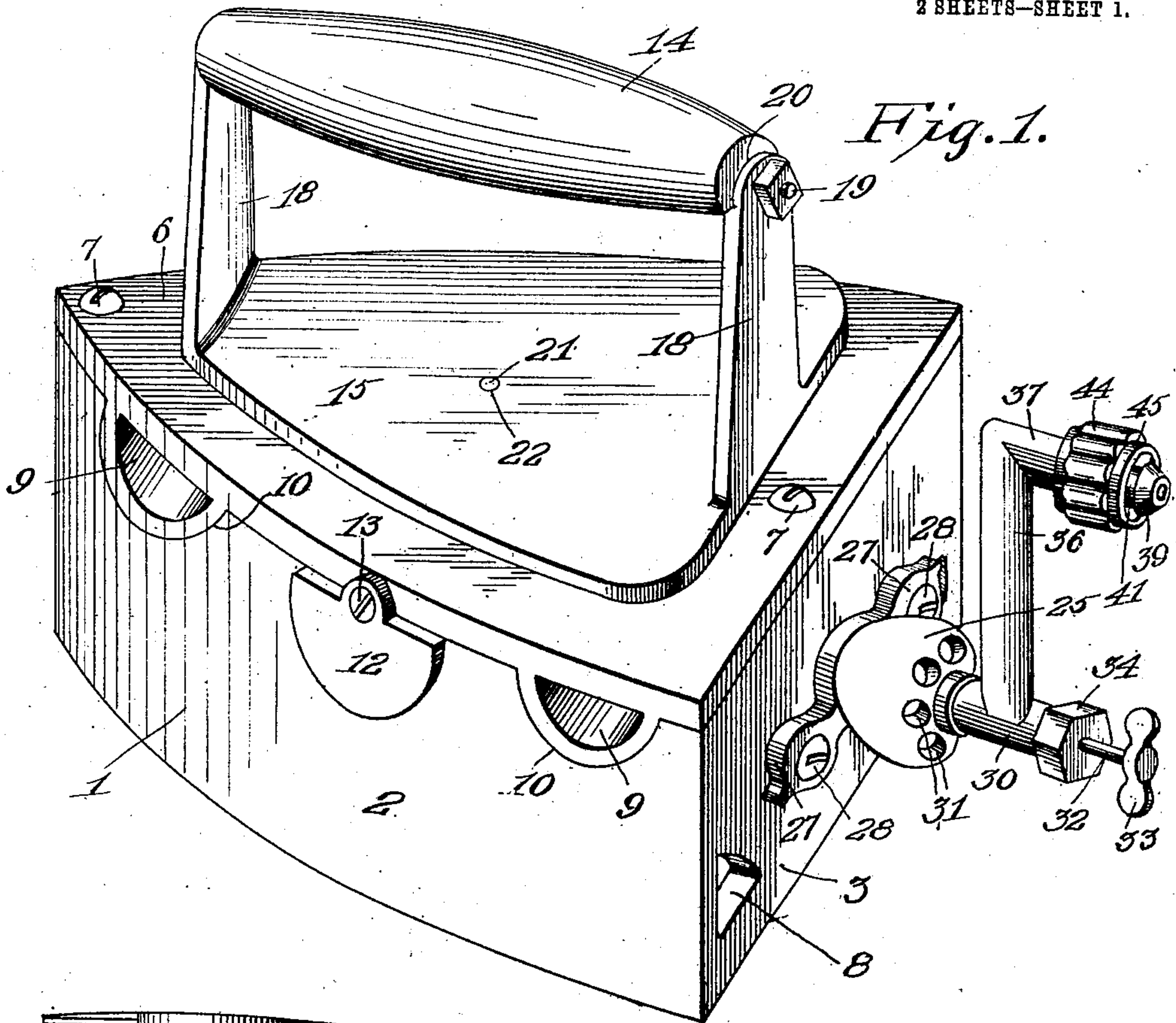


Fig. 1.

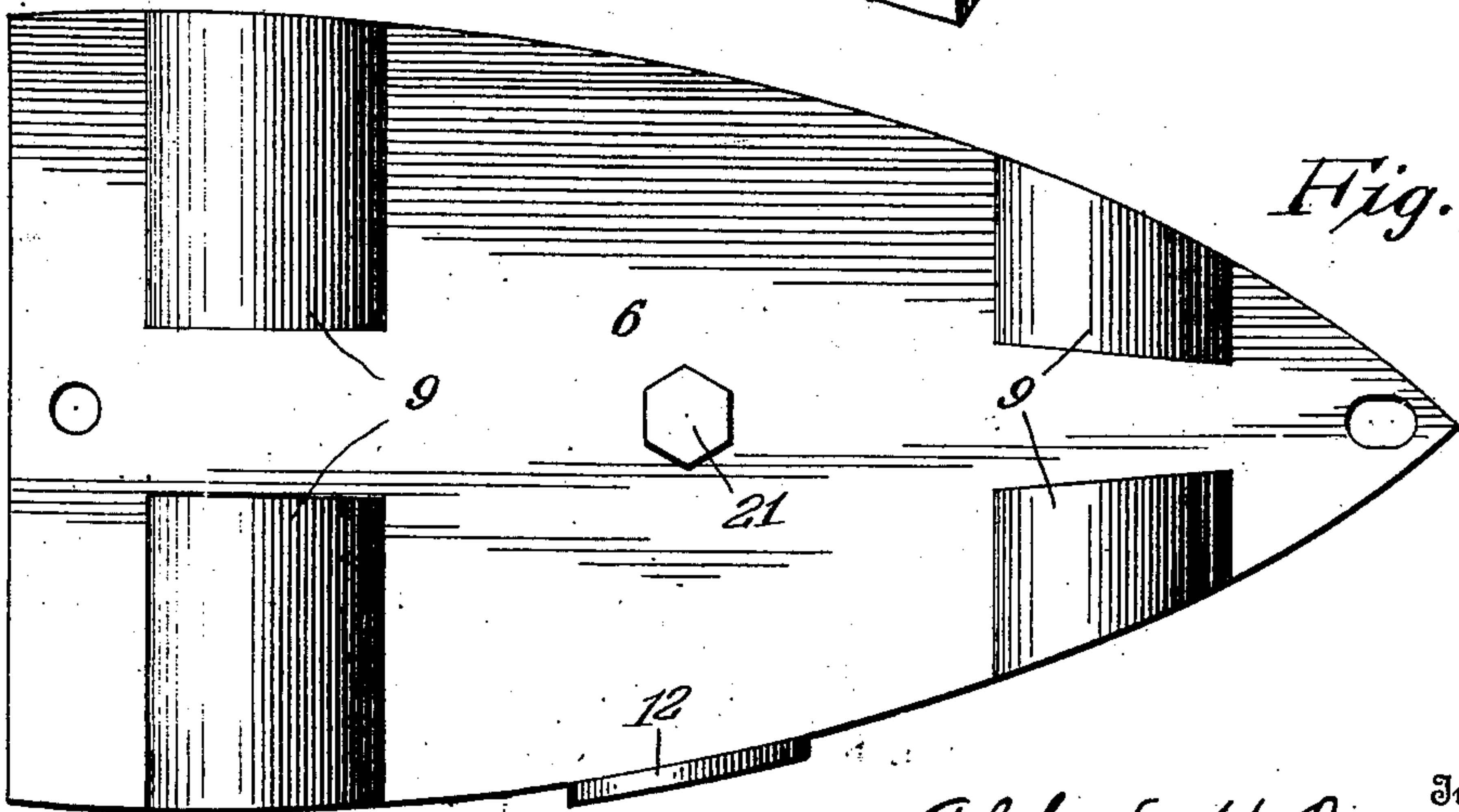


Fig. 4.

Witnesses

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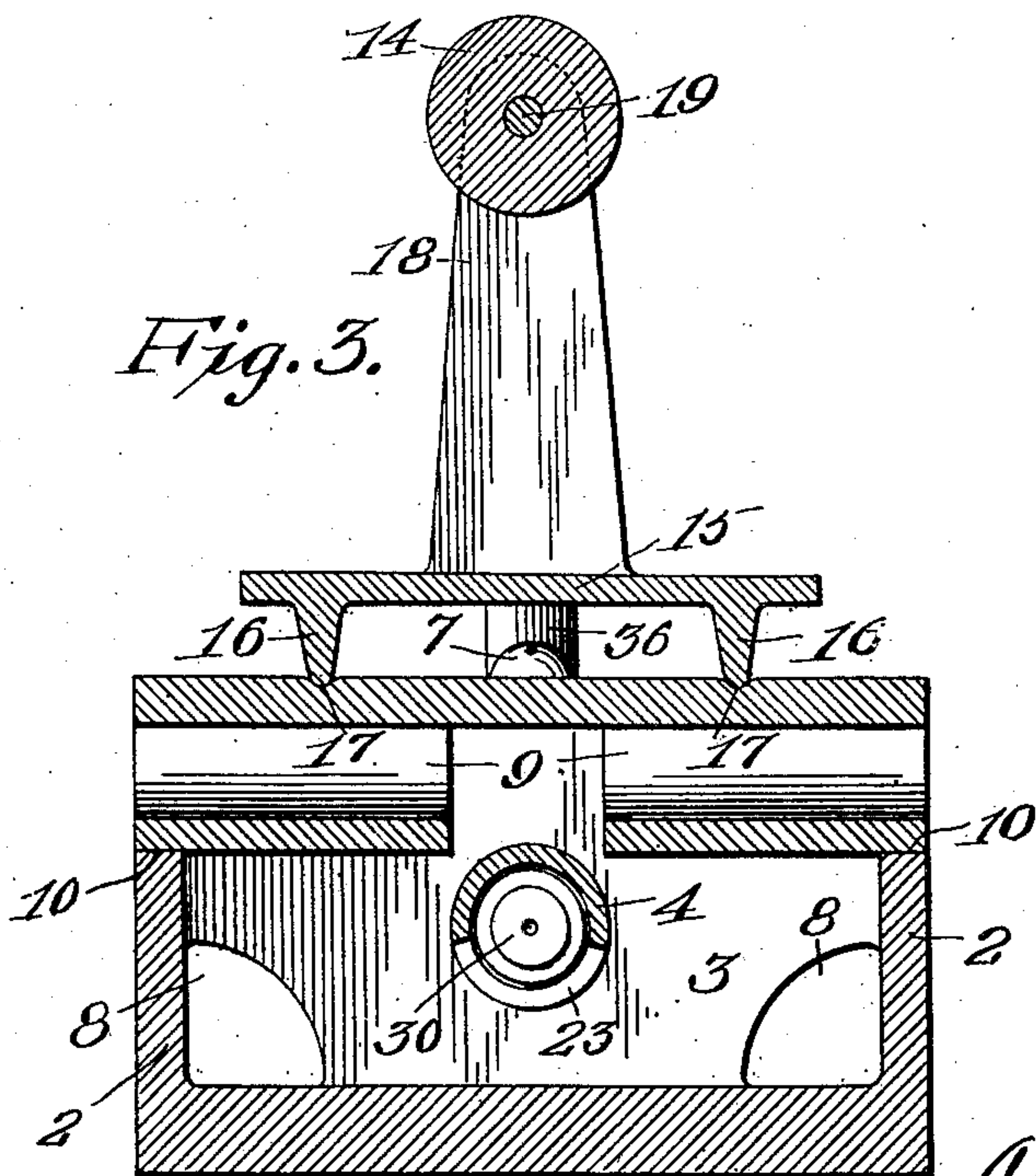
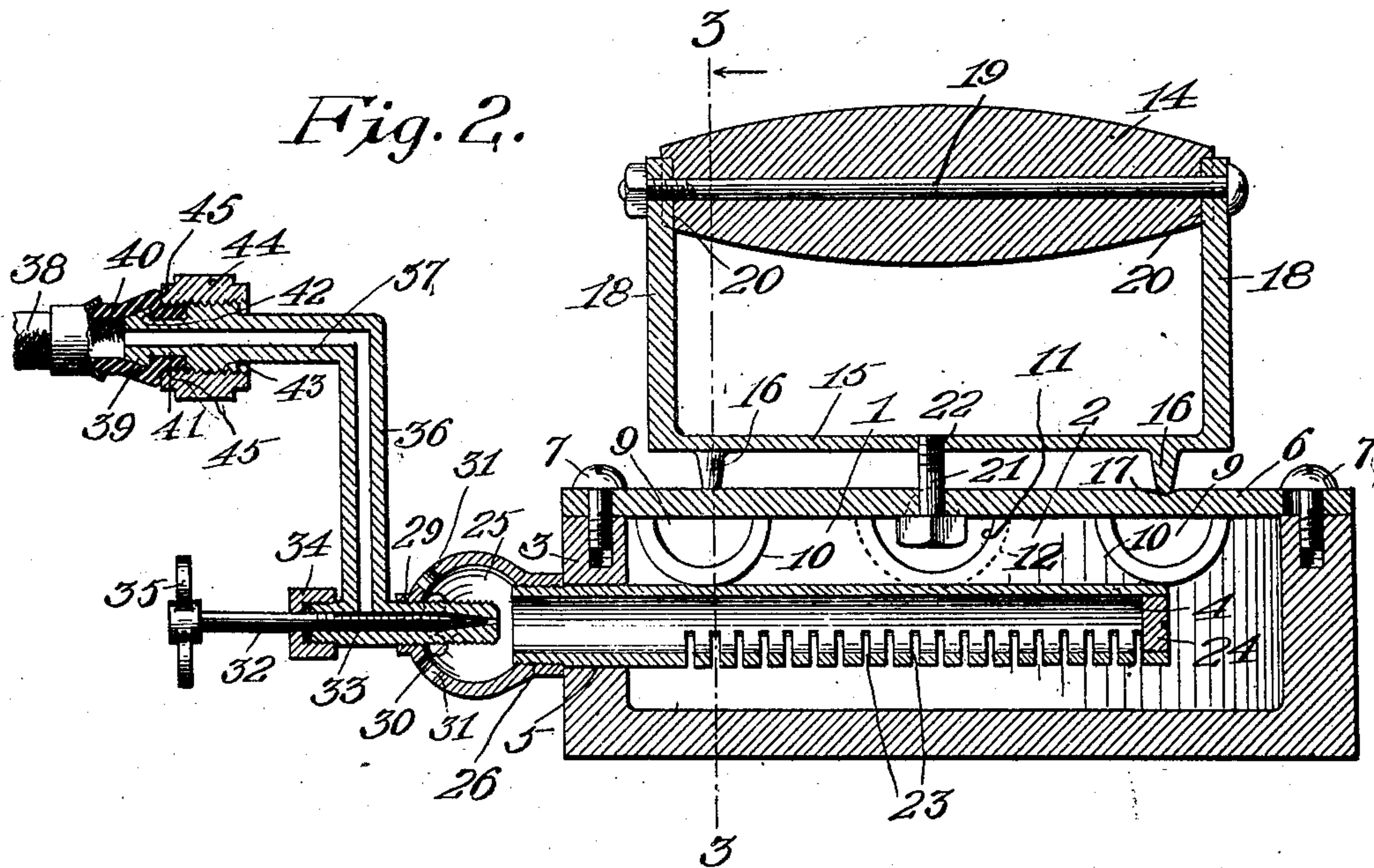
Attorney

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# UNITED STATES PATENT OFFICE.

ALFRED H. DAVIES, OF CANTON, OHIO.

## SELF-HEATED SAD-IRON.

No. 931,686.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed December 14, 1908. Serial No. 467,415.

*To all whom it may concern:*

Be it known that I, ALFRED H. DAVIES, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Self-Heated Sad-Irons, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to improvements in self heating sad-irons and more particularly all those irons which are heated by gas burners.

15 The object of the invention is to improve and simplify the construction and operation of devices of this character and thereby render the same less expensive and more durable, convenient and efficient.

20 With the above and other objects in view, the invention consists of the novel features of construction and the combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

25 Figure 1 is a perspective view of the improved self heating sad-iron; Fig. 2 is a longitudinal section; Fig. 3 is a transverse section; and Fig. 4 is a bottom plan view of the cover for the body of the iron.

30 In the drawings 1 denotes the body of the iron preferably of the usual shape having a cavity or chamber in its top formed by forwardly converging upright side walls 2 and an upright transverse end wall 3. The hollow body 1 is adapted to receive a gas burner 4 projected into the same through an opening 5 in its wall 3, and the open top of said body is adapted to be closed by a removable cover 6. The latter is shown in the form of a plate shaped to fit upon the body and secured upon the upper edges of its side and end walls 2, 3 by screws 7, as shown more clearly in Fig. 2 of the drawings. Air is supplied to the burner 4 through openings 8 formed in the end wall 3 adjacent to its lower corners and the heat and products of combustion from the burner pass out of the hollow body of the iron through transverse outlet flues 9 formed upon the bottom face of the top or cover plate 6 and adapted to fit into notches or recesses 10 formed in the side walls 2. Any number of said flues 9 may be provided but the preferred arrangement is illustrated in the drawings and consists of 55 front and rear pairs of transversely extend-

ing semi-cylindrical tubes cast integral with the bottom of the cover plate 6. The tubes or flues of each pair are in alinement and their inner ends are spaced apart adjacent to the longitudinal axis of the body of the iron so as to receive the heat and products of combustion at the center of the top of the hollow body and conduct the same transversely across the top of the body. If desired, an extra vent may be provided in the upper edge of one of the side walls adjacent its center by the formation of a notch or recess 11 which is similar to the recesses 10. Said ventilation opening or recess 11 is adapted to be controlled by a similar shaped damper plate 12 which is pivoted by a screw 13 upon the adjacent side edge of the cover plate 6. When the damper 12 is swung upwardly above its pivot the opening 11 will be uncovered to permit of the inlet of air or the escape of heat and products of combustion and when said damper is swung downwardly it will effectively close the opening or recess 11.

The body of the iron is provided with an improved handle consisting of a hand grip 14 of wood or other non-heat conducting material and a supporting and attaching member 15 which serves the further purpose of a heat deflector or shield for the hand grip. Said member 15 comprises a plate of substantially the same shape but of slightly less size than the cover plate 6, from which latter it is spaced by three or more lugs or studs 16 formed upon its bottom face and adapted to engage depressions or seats 17 formed in the top of said cover plate. Rising from the ends of the deflector or shield 15 are uprights 18 preferably formed integral with it and provided at their upper ends with apertures to receive a rod or bolt 19 which also passes through the hand grip 14 for the purpose of connecting the latter to said uprights. The ends of the hand grip 14 are preferably recessed, as shown at 20, so as to receive the upper ends of the uprights 18 and thereby prevent the hand grip from rotating upon its fastening bolt 19. The deflector or shield plate 15 is fastened to the cover plate 6 by means of a screw 21 passed upwardly through a central opening in the cover plate and into a threaded opening 22 in said plate 15. Said screw 21 retains the spacing lugs 16 in their seats 17, and the plate or member 15 is thereby pre-



vented from turning or shifting upon the cover plate.

The preferred form of gas burner is illustrated and comprises a burner tube formed in its bottom with transverse slits 23 to permit of the escape of gas. The outer end of the burner tube is closed, as shown at 24, and its other end which projects through the opening 5 in the end wall 3 of the iron body is externally screw threaded and screwed into a member 25 which serves the purpose of a burner supporting and attaching plate and also a gas mixer. Said member 25 consists of a substantially spherical body having one end formed with a threaded opening 26 to receive the threaded end of the burner tube and also with oppositely projecting apertured attaching ears 27 for the reception of screws 28 which engage threaded openings in the end wall 3 of the iron body and serve to attach said member to the same. The other or outer end of the member 25 has a screw threaded opening 29 to receive the casing or tube 30 of a needle valve, and formed in said end adjacent to the threaded opening 29 is a surrounding or annular series of air inlet openings 31. The valve casing 30 has its inner end externally screw threaded to engage the threads in the opening 29 and formed in said end is a small outlet aperture controlled by a needle valve 32. The stem of said valve has a screw threaded portion 33 engaged with internal screw threads formed in the casing 30 and said outer end of the stem also passes through a stuffing box 34 and is provided with a finger piece 35.

Projecting upwardly from the intermediate portion of the body of the needle valve casing 30 is a gas inlet branch 36 having at its upper end a rearwardly projecting portion provided with a coupling 37 for the attachment of a flexible gas supply tube 38. The coupling device 37 comprises a cone-shaped head 39 formed on the extremity of the branch or pipe 36 to enter a soft rubber tip or connecting tube 40 on the end of the flexible gas pipe or tube 38. Said pipe 36 is formed with a reduced portion 41 in rear of the shoulder 42 formed by the cone-shaped head 39 and in rear of said reduced portion is a screw threaded enlargement 43 to receive an internally threaded clamping member 44. The latter has upon its outer surface ribs or corrugations whereby it may be readily grasped and rotated and upon its outer end is an annular longitudinally projecting flange 45 to engage the rubber end or tip 40 and effectively clamp the same in the reduced portion 41 and against the shoulder 42, as clearly shown in Fig. 2 of the drawings. This connection provides an effective gas tight joint and one which cannot be pulled apart by the movement of the iron when it is being used. The other end of the tube 38 may be suitably connected to

a gas supply pipe and is preferably provided with a rubber tip to fit over the burner tube of an ordinary gas fixture.

In using the iron, gas is admitted into the burner tube 4 by opening the needle valve 70 and the gas passing from the slits 23 in the burner may be ignited by inserting a lighted match through the opening 11 in the body of the iron. By adjusting the needle valve the flame of the burner may be regulated as desired and thereby secure the proper flame without regard to the pressure of the gas supply. The peculiar construction of the needle valve and its arrangement in the spherical body portion of the member 25 causes the proper amount of air to be mixed with the gas to provide the most effective flame at the burner. It will be noted that the flames of the burner will be directed downwardly against the bottom of the iron body and will then pass upwardly around the inner face of the side walls 2 and then inwardly under the cover plate 6 and the open inner ends of the transverse flues 9, from the outer ends of which latter the heat and products of combustion will escape. This construction and arrangement, it will be noted, is exceedingly simple and provides a highly efficient self heating iron. Its simplicity enables it to be produced at a very small cost and renders it exceedingly strong and durable. It also renders the device exceedingly easy and convenient to use and the peculiar construction of the burner tube and air and gas mixer effectively prevents the flame from the burner shooting back into said mixing chamber. Furthermore, the burner will not be in any way affected by air currents upon the exterior of the body of the iron and the latter may therefore be used out of doors or in a room through which there is a strong draft.

While the preferred embodiment of the invention has been shown and described in detail, it will be understood that the invention is not limited to the specific construction set forth and that various changes in the form, proportion and minor details may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described the invention what is claimed is:

1. A self heating sad-iron comprising a hollow body having side walls formed in their upper edges with recesses and an end wall formed with a central opening and with air inlet openings adjacent to its bottom, a longitudinally disposed burner tube arranged in the body and extending through the central opening in its end wall, a removable cover plate closing the open top of the body and formed upon its lower face with transversely extending flues which have their inner ends opening adjacent to the center of



the body and their outer ends arranged in certain of the recesses in the side walls of the body, a pivoted damper upon one edge of the cover plate and adapted to close one of the recesses in one of the side walls of the body and a handle for the body.

2. A self heating sad-iron comprising a hollow body having an open top formed in the upper edges of its side walls with recesses and in the bottom portion of its rear wall with openings, said rear wall being also formed with a centrally arranged burner receiving opening, a cover carrying a handle and removably arranged upon the open top of the body, said cover having formed upon its lower face adjacent its ends transversely extending flues having their opposing inner ends opening adjacent to the center of the body and their outer ends arranged in the recesses in the side walls of the body, a damper to close one of the last mentioned recesses in one side wall of the body, a hollow perforated gas mixer secured upon the outer face of the rear wall of the body over the central opening, a burner tube extending

through the latter and screwed into said mixer, and a gas supply pipe containing a needle valve and screwed into the outer end of said mixer.

3. A self heating sad-iron comprising a hollow body having an open top, a burner arranged within said body, a removable cover plate secured upon the open top of the body and formed in its upper face with recesses, a shield plate formed upon its bottom with integral depending studs to engage said recesses in the cover plate and upon its top with upwardly projecting integral uprights, a handle secured to said uprights, and a fastening screw passed upwardly through an opening in the cover plate and into a threaded opening in said shield plate to retain said studs in said recesses and retain the shield plate and handle upon the cover plate.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

ALFRED H. DAVIES.

Witnesses:

SYLVIA BORON,  
WILLIAM H. MILLER.